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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,245	11/25/2003	Jefferson Ys Yang	MR2863-135	4353

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ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER	
DOVE, TRACY MAE	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,245	YANG ET AL.	
	Examiner	Art Unit	
	Tracy Dove	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites "at least one gas passage...the gas passage...separately conveying hydrogen gas and air", which is indefinite. The hydrogen gas and the air are not mixed (contained in a singe gas passage), thus, a separate gas passage is required for separately conveying hydrogen and air. Examiner suggests language such as "a first gas passage" and "a second gas passage".

Furthermore, "a top of each communication channel" should recite "a top of each plurality of communication channels". See at least claims 6 and 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-7 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Boyer et al., US 6,410,179.

Boyer teaches a fuel cell comprising a fluid flow plate having a bridge piece. The fluid flow plate 30 serves as a flow field plate and flow channels 34 (parallel gas channels) conducts fluid which includes reactant gas for fuel cell assembly 10. The reactant gas serves as fuel or oxidant for a given fuel cell. The fluid flow plate may be a bipolar plate. A sealing member is contained within gasket groove 43 to seal and cooperate with the longitudinal extents of layers 28 in formation of the fluid supply manifolds (4:10-28). The bridge piece 64 has a top surface 66 that is substantially planar in order to provide support for the stack component that rests on top of the bridge. Top surface 66 also includes a groove 68 (reception region on top of channels 72) which aligns with groove 43 of plate 30 and receives a gasket and/or gasketing material (pressure resistant packing) such as Teflon® to seal and cooperate with the longitudinal extents of the layers of a stack. Fluid flow channels 72 (communication channels) cooperate with the flow channels of the fluid flow plate to allow fluid communication with a corresponding fluid entry manifold and/or fluid exit manifold (gas passage) (5:22-43). Figures and 5 show the width of the groove 68 is larger than the total width of the channels 72. The fuel cell includes a membrane electrode assembly, an anode bipolar plate, a cathode bipolar plate and gaskets.

Thus the claims are anticipated.

*

Claims 1, 2, 4-9 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugita et al., US 6,866,956.

Sugita teaches a fuel cell comprising a membrane electrode assembly (MEA) between a pair of separators 4, 5. Between the MEA and each of the separators 4, 5 are disposed respectively gas sealing members 6, 7. The separators 4, 5 have a plurality of grooves in a surface of a flat plate, a fuel gas supply hole, an oxidizing gas supply hole, a fuel gas discharge hole and an oxidizing gas discharge hole (6:23-67). Communication passages 25 formed by a plurality of grooves 25a and a bridge plate 25b are provided between the oxidizing gas supply hole 18 and the corrugated section 5a and between the corrugated section 5a and the oxidizing gas discharge hole (7:52-59). The bridge plate (pressure resistant packing) is placed in concave section (reception region), which enables the surface of the bridge plate to be placed within the same planar surface as the planar section of the separator with no difference in level (7:35-51). Figure 4 shows the bridge plate has a larger width than the communication channels. The bridge plate may be placed at a superposed position with respect to the gas sealing member (4:49-51).

Thus the claims are anticipated.

*

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilson et al., US 6,864,004.

Wilson teaches a fuel cell comprising bipolar plates having fuel flow-fields, membrane electrode assemblies (MEAs), end plates and gasket designs to isolate the channels in the seal region (3:5-22). Cathode manifold inlets and outlets are coupled by channels 70, 71 and anode manifold inlets and outlets are coupled by channels 72, 73 (3:29-36). Small depressions 75

(reception region) hold thin inserts 80 (pressure resistant packing) in the areas where channels 70, 71, 72 and 73 connect manifold inlet/outlets 50, 55, 60 and 65, respectively. Thin inserts 80 comprise a rigid material that prevents the edges of a diffusion backing or a gasket material from obstructing the flow channels in these areas. A preferred material for 80 is a fiberglass reinforced resin material (hard polymer) (4:50-59). See Figures 3A-3C.

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugita et al., US 6,866,956 in view of Jones, US 6,017,648.

Sugita teaches a fuel cell comprising a membrane electrode assembly (MEA) between a pair of separators 4, 5. Between the MEA and each of the separators 4, 5 are disposed respectively gas sealing members 6, 7. The separators 4, 5 have a plurality of grooves in a surface of a flat plate, a fuel gas supply hole, an oxidizing gas supply hole, a fuel gas discharge hole and an oxidizing gas discharge hole (6:23-67). Communication passages 25 formed by a plurality of grooves 25a and a bridge plate 25b are provided between the oxidizing gas supply hole 18 and the corrugated section 5a and between the corrugated section 5a and the oxidizing gas discharge hole (7:52-59). The bridge plate (pressure resistant packing) is placed in concave section (reception region), which enables the surface of the bridge plate to be placed within the

same planar surface as the planar section of the separator with no difference in level (7:35-51). Figure 4 shows the bridge plate has a larger width than the communication channels. The bridge plate may be placed at a superposed position with respect to the gas sealing member (4:49-51).

Sugita is silent regarding the material of the bridge plate.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Jones teaches a fuel cell comprising a fluid flow passage bridgepiece for insertion into a fluid flow channel of a fluid flow plate (abstract; Figures 5-7). The bridgepiece may be made of metal or any of various plastics (hard polymer), preferably PVDF or Nylon (5:54-59). One of skill would have been motivated to use a plastic material for the bridge plate of Sugita in view of the teaching by Jones that plastic materials are known for use as bridgepiece materials for insertion into fluid flow plates of fuel cells.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 15, 2006

TRACY DOVE
PRIMARY EXAMINER